



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

D412-702-071
Job Sheet 173243



Part No: D412-702-071

Job Qty: 6 ea

Part Name: Comfort Crew Shoulder Harness



Part Weight: 0 lbs

Status: Scheduled

Priority: Medium

Job Created: 2/27/18

Job Tracking No:

Due Date: 3/2/18

Created By: Linda Lacelle

Type: Return

Description:

Note: DWG REV B IPP Rev: A 11.03.01 new issue DD ver: EC IPP Rev: B 12.09.05 per DSI9612 DD ver: JFS

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup hrs	Run Hrs	Workcenter / Supplier	Lead Time	
90	Start up Operation	6 Ea		3/2/18	0.00	0.00	Start Up Stores/Pkg-2		
110	Packaging	6 pcs		3/2/18	0.00	0.00	Packaging1-4		sl 6 MAR 08 2018
120	QC	6 pcs		3/2/18	0.00	0.00	QC4		SMB
125	DC	6 pcs		3/2/18	0.00	0.00	DC		
130	Packaging	6 pcs		3/2/18	0.00	0.00	Packaging3-2		
140	QC21-FG	6 Ea		3/2/18	0.00	0.00	QC21		msf. 18/03/18 SMB fg 009

Job BOM

Part / Item	Component Name	Quantity	Operation	Container
D412-702-071	Comfort Crew Shoulder Harness	6 Ea (1 ea)	90-Start up Operation	

Job Allocations

Operation	Component Part	Required	Inventory	Allocated
90-Start up Operation	D412-702-071	6	1	0

Part Specifications

Specifications could not be found.

master unit 1628

5045930

DAS
10
18.03.13

DAS
21
9-80

MAR 12 2018

Plex 2/27/18 11:29 AM dart.lacelle.linda

18.03.13

AN970 - 4 washen x4 501395

✓ NAS1149D04631 5027730 x8
✓ NAS1149D04321 50137459-15 x8
✓ NAS1149D03631 5015269 x12
✓ NAS1149D03321 5020606 x20
✓ MS21042L4 5045901 x4
✓ MS21042L3 5038764 x12
✓ AN3-10A 5041477 x4
✓ AN4-6A 5049389 x4
AN3-4A 5019388 x8

QA Closed: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____ Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION	AGAINST DEPARTMENT/PROCESS					
	Rework ☐	Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐		
	Scrap ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐		
	Use-as-is ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐		
	Suspected Unapproved ☐	Large Fab ☐	Composite ☐	Supplier ☐			

Date :	Step #:	QTY Effective :	MRB (QSI042) Approval
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Description Work Order Deviation	Disposition	Completed By
		Lead hand / Supervisor Approval Verification

Root Cause		
Environment ☐	No Re-verification ☐	Pressure/Forced ☐
Design ☐	Operator ☐	Bending ☐
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐
Equip/Tooling ☐	Supplier ☐	Cracks ☐
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/ Cuffs ☐
Material ☐	Use for Testing ☐	Crushing ☐
Internal Transport ☐	Poor Information ☐	Heat Treat ☐
Tribal Knowledge ☐	Rushing ☐	Wave/Twist in Tube ☐
LOA ☐	Product Improvement ☐	Marks/Chatter ☐
Substation ☐	Process Improvement ☐	
Past Expiry Date ☐	Manufacturing Process ☐	
Misidentified ☐	Past Due ☐	OTHER : _____

Job No: 173243
Mfg Date: 02/27/18
Packaging CHG003
Operation: Change No:
Revision:
Serial No/Batch: S045930
PART NO: D412-702-071
Comfort Crew Shoulder Harness

Inspection Sheet Complete

RA112542_RA36

Customer QA Ref #

0

Part Number	Batch / Serial #	Quantity	Part Complete	Rev/CHG Current	New Paperwork	New Labels	Disposition	Work order #	Work order instructions
D412-702-071	B159326	6	☐ Yes	☐ Yes	☐ Yes	☐ Yes		S013554	Stock with new batch number at CHG 003.
0		0	☐ Yes	☐ Yes	☐ Yes	☐ Yes			
0		0	☐ Yes	☐ Yes	☐ Yes	☐ Yes			
0		0	☐ Yes	☐ Yes	☐ Yes	☐ Yes			
0		0	☐ Yes	☐ Yes	☐ Yes	☐ Yes			
0		0	☐ Yes	☐ Yes	☐ Yes	☐ Yes			

QC Approval: _____ 0

Date: 0-Jan-00 _____

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation			Disposition		
			Completed By		
			Lead hand / Supervisor Approval Verification		
			QC / QA Coordinator Approval		
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐
OTHER : _____					



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Status: Scheduled

Priority: Medium

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Due Date: 3/2/18

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Type: Return

Description:

Note: DWG REV B IPP Rev:A 11.03.01 new issue DD verf:EC IPP Rev:B 12.09.05 per DSI9612 DD verf:JFS

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup hrs	Run Hrs	Workcenter / Supplier	Lead Time	
90	Start up Operation	6 Ea	3/2/18	3/2/18	0.00	0.00	Start Up Stores/Pkg-2		
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120	QC	6 pcs	3/2/18	3/2/18	0.00	0.00	QC4		
125	DC	6 pcs	3/2/18	3/2/18	0.00	0.00	DC		
130	Packaging	6 pcs	3/2/18	3/2/18	0.00	0.00	Packaging3-2		
140	QC21-FG	6 Ea	3/2/18	3/2/18	0.00	0.00	QC21		

Job BOM

Part / Item	Component Name	Quantity	Operation	Container
D412-702-071	Comfort Crew Shoulder Harness	6 Ea (1 ea)	90-Start up Operation	

Job Allocations

Operation	Component Part	Required	Inventory	Allocated
90-Start up Operation	D412-702-071	6	7	0

Part Specifications

Specifications could not be found.

Plex 3/7/18 7:27 AM dart.lacelle.linda

BQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition			Completed By		
							Lead hand / Supervisor Approval Verification		
							QC / QA Coordinator Approval		
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐							
OTHER :									

REFERENCE ONLY

DART SERVICE INSTRUCTION

TO AMEND IIN-D412-702-3 REV. A OR EARLIER

AND ICA-D412-702 REV. 4 OR EARLIER

REF CANADIAN STC: SH04-7

REF FAA STC: SR01997NY

REF EASA STC: EASA.IM.R.S.00710

1.0 PURPOSE

THE PURPOSE OF THIS DSI IS TO CORRECT THE HARDWARE CALLED OUT IN THE D412-702-071 KIT.

2.0 WEIGHT AND BALANCE

NO CHANGE.

3.0 PARTS LIST

IS:

QTY -071	P/N	DESCRIPTION
X	D412-702-071	DART PILOT/CO-PILOT SHOULDER HARNESS KIT
1	D4305-041	SHOULDER HARNESS
4	AN3-4A	BOLT
2	AN4-6A	BOLT
2	AN3-10A	BOLT
6	MS21042L3	NUT
2	MS21042L4	NUT
10	NAS1149D0332J	WASHER
6	NAS1149D0363J	WASHER
4	NAS1149D0432J	WASHER
4	NAS1149D0463J	WASHER

WAS:

QTY -071	P/N	DESCRIPTION
X	D412-702-071	DART PILOT/CO-PILOT SHOULDER HARNESS KIT
1	D4305-041	SHOULDER HARNESS
4	AN3-4A	BOLT
2	AN3-6A	BOLT
2	AN3-7A	BOLT
14	NAS1149D0332J	WASHER
8	NAS1149D0363J	WASHER
8	MS21042L3	NUT

CANADA
DEPARTMENT OF TRANSPORT
AIRCRAFT CERTIFICATION
BRANCH
DAO # 01-O-01

APPROVED

BY: 
D. SHEPHERD (DE # 02)

DATE: 12.05.01
CERT. NO.: SH04-7
ISSUE NO.: 3

A	NEW ISSUE	RP	12.05.01
REV.	DESCRIPTION	BY	DATE
DESIGN	RP	DART AEROSPACE LTD	
DRAWN	RP	HAWKESBURY, ONTARIO, CANADA	
CHECKED	AL	DRAWING NO.	REV. A
MFG. APPR.	N/A	DSI 9612	SHEET 1 OF 2
APPROVED	RP	TITLE	PILOT/CO-PILOT HARNESS SCALE
DE APPR.	RP	UPDATES	NTS
DATE	12.05.01	COPYRIGHT © 2012 BY DART AEROSPACE LTD	
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4.0 WEIGHT AND BALANCE

Installation	Weight	LATERAL		LONGITUDINAL	
		Arm	Moment	Arm	Moment
D412-702-071	-2.6 lb	± 22.0 in	± 57.2 in lb	47.0 in	-122.2 in lb
<i>Pilot/Co-pilot Shoulder Harness Kit</i>	-1.2 kg	± 0.56 m	± 0.67 m kg	1.19 m	-1.43 m kg
D412-702-073	-2.6 lb	± 22.0 in	± 57.2 in lb	47.0 in	-122.2 in lb
<i>Pilot/Co-pilot Shoulder Harness Kit</i>	-1.2 kg	± 0.56 m	± 0.67 m kg	1.19 m	-1.43 m kg
D412-702-075	-2.6 lb	± 22.0 in	± 57.2 in lb	47.0 in	-122.2 in lb
<i>Pilot/Co-pilot Shoulder Harness Kit</i>	-1.2 kg	± 0.56 m	± 0.67 m kg	1.19 m	-1.43 m kg

5.0 PARTS LISTS

QTY -071	QTY -073	QTY -075	Part Number	Description
X			D412-702-071	Dart Pilot/Co-Pilot Shoulder Harness Kit
	X		D412-702-073	Dart Pilot/Co-Pilot Shoulder Harness Kit
		X	D412-702-075	Dart Pilot/Co-Pilot Shoulder Harness Kit
1			D4305-041	SHOULDER HARNESS
	1		D4305-043	SHOULDER HARNESS
		1	D4305-045	SHOULDER HARNESS
4	4	4	AN3-4A	BOLT
2	2	2	AN4-6A	BOLT
2	2	2	AN3-10A	BOLT
4	4	4	AN970-4	WASHER
6	6	6	MS21042L3	NUT
2	2	2	MS21042L4	NUT
10	10	10	NAS1149D0332J	WASHER
6	6	6	NAS1149D0363J	WASHER
4	4	4	NAS1149D0432J	WASHER
4	4	4	NAS1149D0463J	WASHER